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greater accuracy on the part of masters of ships in their observations, I conceive it would be to them of some service, as well as to scientific men in general.

No. XXVI.

ON RENDERING PAPER-HANGINGS USEFUL
AS WELL AS ORNAMENTAL.

By THE SECRETARY.

PAPER-HANGINGS are of several kinds, some of which are made in imitation of velvet, damask, chintzes, &c., while others are in imitation of marbles, stucco-work, &c.

There are three methods by which paper-hangings are painted. The first by printing on the colours, the second by means of the stencil, and the third by using the pencil as in other kinds of painting.

In the first method the impression is made by wooden blocks, in which the patterns are cut, the parts to be shewn being made to project from the surface by cutting away all the other parts. The blocks being charged with the required colour, properly tempered, are pressed on the paper prepared with a proper ground of colour or varnish.

The colour to be used by the printer is spread on oil-cloth, laid on a flat block a little larger than the print; this operation is performed by an attendant, who spreads the colour with a brush on the block, between every stroke and impression made by the printer.

When the sheet is printed throughout, it is hung up to dry, and the operation is repeated with another piece of paper.

For each separate colour in a particular pattern there is a separate block, so that a piece of paper has to pass under the printer's hands as many times as there are distinct colours in the pattern to be produced; some modern papers have required as many as seventy-two separate blocks. The placing of the different blocks in the exact position on the paper requires considerable skill on the part of the printer.

The second method, which is adopted for common paper-hangings, is merely to print the outlines, and fill in the colours by stencilling.

The stencils are either of leather or oil-cloth, and are cut out to correspond with all the figures to be printed in one colour, and, being placed flat on the paper to be printed, the colour is rubbed over the upper side, thus passing through all the parts cut out, and giving the proper impression on the paper below.

This method is only applicable for patterns of the most common description, it being impossible to represent fine lines by the stencilling process.

The third method, viz., by pencilling, is only used for the more costly hangings in imitation of Chinese and Indian papers, and is performed in the same manner as other paintings in water or varnish; sometimes the outline is printed, and then the colouring performed by pencilling. The first of the three methods which I have endeavoured briefly to describe is the one in ordinary use, in which the order of printing is first to lay on the ground colour, next the various shades, then the lights, and lastly the outline. Very fine lines and points, or dots, are introduced by means of rules and points of the particular forms required, which are let into the wooden blocks, as types are let into the small blocks used for printing illustrations to books.

The above is only an outline of the ordinary methods used ; but, as my object is to introduce a system of useful paper-hangings, I need not enter more into detail with regard to methods in practice of producing the finest specimens of hangings, but proceed at once to the object of this communication.

My mind has long been impressed with the idea of rendering the modern hangings of walls useful as well as ornamental.

For this purpose I have proposed that useful information should, in the more ornamental patterns, be so blended with the design as not to disfigure it, and thus ornament, with amusement and instruction combined, would add greatly to the value of paper-hangings, and often serve as a ready mode of reference for information desired. When wanted especially for use, without any regard to ornamental appearance—as, for instance, Sunday and other schools, for the lecture-room of colleges and seminaries—I propose to introduce the information in panels.

I have arranged, mixed with several ordinary patterns, some specimens illustrative of my proposition ; and I think it will be allowed that in one or two of them the patterns are not disfigured by the introduction of the useful information they contain in the shape of historical and other facts.

In one pattern I have introduced words in several languages, which would be especially useful if carried out to a sufficient extent.

The greatest—indeed I believe the only—objection which has been raised against the introduction of these useful paper-hangings is the cost.

Now, for patterns likely to be extensively used in infant and other schools and seminaries, it would be

worth while to cut out the writing in wood-blocks, or fix in metal letters for each particular sentence to be introduced.

Another mode I propose is, to have movable types introduced into a frame, so arranged as to form a substitute for one of the numerous blocks required in cases where the pattern is made up of a variety of colours. Thus, when as many copies as are likely to be required at the time have been printed, the type is to be distributed, and again set up for another piece of information, while the rest of the pattern is printed with the different blocks as usual.

A third mode which I propose is to print the patterns complete in the ordinary way, leaving, however, spaces for the writing to be inserted according to the style and fancy of individuals. This is by no means so expensive a method as persons unacquainted with the process would be led to suppose.

No. XXVII.

ON A PLAN OF ECONOMISING FUEL IN THE
BOILERS OF LOCOMOTIVE ENGINES.

By C. TETLEY.

April 3, 1844.

WILLIAM POLE, ESQ. F.R.S. V.P. IN THE CHAIR.

Abstract.

“THE evaporating power of a boiler,” observes the author, “is dependent chiefly on three causes:—

- “1. The amount of boiler surface exposed to the reception of heat.